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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/664,218

09/17/2003

Alexander A. Maltsev

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02/05/2008

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EXAMINER

HARPER, KEVIN C

ART UNIT

PAPER NUMBER

2616

MAIL DATE

DELIVERY MODE

02/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/664,218

Applicant(s)

MALTSEV ET AL.

Examiner

Kevin Harper

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

1. Applicant's arguments filed November 30, 2007 have been fully considered but they are not persuasive. Applicant argued that Ma does not disclose receiving channel state information that comprises a channel transfer function estimate. However, Ma receives channel state information comprising a channel transfer function estimate (para. 7, lines 1-4; note: CIR) and a BER (para. 23, line 10). A modulation rate is adjusted based on the channel state information (para. 23; note: BER).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5-8, 10-13, 15-18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma et al. (US 2003/0147476) in view of Subramanian et al. (US 2001/0031014).

2. Regarding claims 1-3, 5, 11-13, 15-18 and 20, Ma discloses a method comprising receiving channel state information (fig. 1; para. 7, lines 1-4; note: CIR; para. 23, line 10; note: BER) including a channel transfer function estimate (CIR) and adjusting a modulation rate based on the channel state information (para. 23, line 10; note: adjusting a modulation scheme based on a bit error rate). Further regarding claim 11, the method is implemented by an apparatus

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comprising a modulation encoder and a weighting block (figs. 1 and 2). Further regarding claim 16, the system is OFDM (para. 23).

3. However, Ma does not disclose rescaling subcarrier power based on channel state information. Subramanian discloses adjusting subcarrier transmit power based on channel state information (paras. 7 and 17; fig. 2). A subcarrier is turned off by allocating no bits (para. 57) and subcarriers are selected based on a SNR ratio threshold (paras. 17 and 33-34). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to rescale subcarrier transmit power based on channel state information in order to maintain a desirable communication session (para. 7).

4. Regarding claims 6-8 and 10, Ma discloses a method as noted in the rejection of claims 1-3 and 5 above. However, Ma does not disclose a computer readable medium for storing program instruction to carry out a method. One skilled in the art would recognize that program instructions stored in a computer readable medium are used to implement a method. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to have a computer readable medium in the invention of MA in order to provide a flexibly operated communication device as is known in the art.

Claims 4, 9, 14 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ma in view of Sumramanian as applied to claims 1, 6, 11 or 16, above, and further in view of Sampath (US 2003/0043929).

5. Regarding claims 4, 9, 14 and 19, Ma in view of Subramanian does not disclose trellis coding. Sampath discloses trellis coding for use in an OFDM system (paras. 53 and 78).

Therefore, it would have been obvious to one skilled in the art at the time the invention was

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made to have trellis coding in the invention of Ma in view of Sampath in order to provide a robust coding scheme as is known in the art (Sampath, para. 78).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

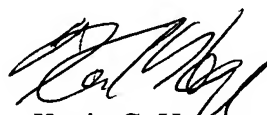
A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Harper whose telephone number is 571-272-3166. The examiner can normally be reached weekdays from 11:00 AM to 7:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynn Feild, can be reached at 571-272-2092. The centralized fax number for the Patent Office is 571-273-8300. For non-official communications, the examiner's personal fax number is 571-273-3166 and the examiner's e-mail address is kevin.harper@uspto.gov.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications associated with a customer number is available through Private PAIR only. For more information about the PAIR system, see portal.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kevin C. Harper

February 4, 2008